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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,554	07/17/2003	Zong-Xi Lin	LINZ3001/BEU	9246
23364	7590	04/19/2005	EXAMINER	
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			MONBLEAU, DAVIENNE N	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/620,554	Applicant(s) LIN, ZONG-XI	
	Examiner Davienne Monbleau	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2005.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
 4a) Of the above claim(s) 7 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-6 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 04 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of group I (Claims 1-6) in the reply filed on 4/4/05 is acknowledged.

Claim 7 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 4/4/05.

An action on the merits regarding Claims 1-6 follows.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adan et al. (U.S. 6,303,924) in view of Gordon et al. (U.S. 6,433,780).

Regarding Claim 1, *Adan* teaches in Figure 3 an optical input device comprising a light source (104) for reflecting a light beam from a working surface (116), an optical sensing module (110 and 112) that detects the reflected light beam, a control unit (114) coupled to the optical sensing module (110 and 112) for reading the coefficient and outputting a feedback signal based on the coefficient and variably modulating the light beam generated by the light source (104).

Adan further teaches in column 9 lines 12-40 that the reflected light is indicative of the surface, hence indicating optical properties of the working surface. This information is stored in a

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memory component (124) within the optical sensing module (110 and 112) and is used to execute one of any number of algorithms, thus acting as a coefficient. *Adan* teaches in column 8 lines 47-63 modulating the light intensity of light source (104) via adjusting the current to the light source (104), but does not teach pulse width modulation. *Gordon* teaches in Figure 1 and in column 8 lines 43-65 an optical input device comprises adjusting the output intensity of the light source (2), which may be achieved by pulse width modulation. It would have been obvious to one of ordinary skill in the art at the time of the invention to adjust the light intensity via pulse width modulation in *Adan*, as taught by *Gordon*, as it is another suitable means by which to provide the same function of controlling the light source intensity.

Regarding Claim 2, *Adan* teaches in column 9 lines 25-40 storing information in the optical sensing module (110 and 112), but does not teach a register. It would have been obvious, however, to one of ordinary skill in the art at the time of the invention to use a register to store information because it is internal to a processing device, which provides faster access times to the stored information.

Regarding Claim 3, *Adan* teaches in column 9 lines 20-25 that the stored information (i.e. coefficient) is a surface quality value (SQUAL).

Regarding Claim 4, *Adan* teaches in Figure 3 that the light source is a light emitting diode (104)

Regarding Claim 6, *Adan* teaches in Figure 3 that the input device is an optical mouse (42).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adan in view of Gordon, as applied to Claim 1 above, and further in view of Applicant's admitted prior art (AAPA).

Regarding Claim 5, *Adan* in view of *Gordon* teaches modulating the light source but does not teach modulating a frame rate and/or a shutter mode. *AAPA* teaches in the specification on page 1 that modulating a frame rate or a shutter mode is known in the art of conventional optical input devices (i.e. optical mouse). It would have been obvious to one of ordinary skill in the art at the time of the invention to modulate a frame rate and/or shutter mode in *Adan*, as taught by *AAPA*, to upgrade the quality of the captured images.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Oliver et al. (U.S. 6,455,840) teaches an optical navigation system comprising controlling an electronic shutter to save power by pulsing its surface illumination light source.

Casebolt et al. (U.S. 6,661,410) teaches in Figure 4 an optical input device that controls the output intensity of a light source.

Liebenow (U.S. 6,078,312) teaches an optical input device comprising a mouse pad that has a surface with a plurality of uniquely coded positions, the uniquely coded positions being a two-color gradient in which each color goes from maximum to minimum intensity, and sensors to detector the intensity levels.

Choi et al. (U.S. 6,753,851) teaches an optical mouse having an input range adjusted based on an image data processor that has a feedback loop to control a shutter/controller unit.

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Takahashi et al. (U.S. 2002/0080247) teaches an image pickup device comprising controlling three parameters, one of which is shutter speed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davienne Monbleau whose telephone number is 571-272-1945.


The examiner can normally be reached on Mon-Fri 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Davienne Monbleau

DNM


DAVID PORTA
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